

## Year 10

Timing	Unit Title	Key Question	Knowledge	Assessing Understanding
Autumn Half Term 1	<b>P1 – Basics</b>	How do I write programs in real code?	<ul style="list-style-type: none"> <li>Algorithmic thinking</li> <li>Delphi basics</li> <li>Selection – IF and CASE</li> </ul>	<p><b>How understanding is assessedesd :</b></p> <ul style="list-style-type: none"> <li>A series of homeworks where girls submit their programs for checking</li> <li>Progress is monitored and recorded during lessons</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>Basic Delphi syntax</li> <li>Use of IF and CASE</li> </ul> <p><b>Assessment point information</b> Homework marks will feed into an Assessment Point. Progress data is collected and stored each lesson, along with comments on individuals.</p>
	<b>T1 – Data Representation</b>	How do computers store data?	<ul style="list-style-type: none"> <li>Binary numbers and conversion to and from denary</li> <li>Hexadecimal numbers and why they are useful</li> <li>Storage of sound files and file types</li> <li>Concept of Sampling</li> <li>Storage of images and file types</li> </ul>	<p><b>How understanding is assessed :</b></p> <ul style="list-style-type: none"> <li>Binary and simple data representation is assessed using online tests</li> <li>Overall understanding is assessed with a formal test.</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>Conversion of data from one representation to another</li> </ul>

				<b>Assessment point information</b> All three test marks feed into an Assessment Point.
Autumn Half Term 1	<b>P2 – Manipulating Data</b>	How do I work with numbers and strings?	<ul style="list-style-type: none"> <li>● String Functions :               <ul style="list-style-type: none"> <li>○ Leftstr</li> <li>○ rightstr</li> <li>○ midstr</li> <li>○ [] brackets</li> <li>○ Length</li> </ul> </li> <li>● Numeric functions :               <ul style="list-style-type: none"> <li>○ MOD</li> <li>○ DIV</li> <li>○ ROUND</li> <li>○ TRUNC</li> </ul> </li> <li>● Dry running</li> </ul>	<b>How understanding is assessed :</b> A final assessed exercise tests all of these new functions. Girls' progress is also monitored and recorded in lessons  <b>Skills</b> <ul style="list-style-type: none"> <li>● Ability to solve problems using string functions</li> <li>● Ability to solve problems using numeric functions</li> <li>● Dry running – can handle simple code</li> </ul> <b>Assessment point information</b> Marks from the final handin of the assessed exercise and BM (Behaviour Management) data feed into an Assessment Point.
Autumn Half Term 2	<b>T2 - Software</b>	What are the different types of Software?	<ul style="list-style-type: none"> <li>● System Software – concept</li> <li>● Utility programs – concept and examples</li> <li>● OS – functions and features</li> </ul>	<b>How understanding is assessed :</b> <ul style="list-style-type: none"> <li>● Students present their findings to the group</li> </ul> <b>Skills</b> <ul style="list-style-type: none"> <li>● Presentation skills</li> <li>● Team-working skills</li> </ul> <b>Assessment point information</b> BM data will be collected on their progress while working and when giving their final presentations. This can feed in to an Assessment Point

Autumn Half Term 2	<b>P3 - Loops</b>	How do I make use of repeating code?	<ul style="list-style-type: none"> <li>• For-do loops</li> <li>• While – do loops</li> <li>• Repeat-until loops</li> <li>• Debugging techniques</li> </ul>	<p><b>How understanding is assessed :</b></p> <ul style="list-style-type: none"> <li>• Dry Running homeworks to check understanding</li> <li>• Handin of programming exercises</li> <li>• Final assessed exercise covering all types of loop</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Can use all three types of loop</li> <li>• Understands when it appropriate to use of of the three types</li> </ul> <p><b>Assessment point information</b> The final assessed exercise feeds into an Assessment Point, as do the marks from the smaller homeworks</p>
Spring Half Term 1	<b>T3 – Memory and Storage</b>	Why do you need memory and storage?	<ul style="list-style-type: none"> <li>• RAM and ROM</li> <li>• Cache memory</li> <li>• Need of Secondary Storage</li> <li>• Types of secondary storage</li> <li>• Comparative usage of different types of secondary storage</li> </ul>	<p><b>How understanding is assessed :</b></p> <ul style="list-style-type: none"> <li>• Girls report their findings in groups to the whole class</li> <li>• Kahoot Quiz</li> <li>• Homework to test knowledge of storage devices</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Ability to specify sensibly memory and secondary storage for a given situation</li> </ul> <p><b>Assessment point information</b> The homework feeds into an Assessment point, and data is collected when groups are reporting, which can also be used as part of the AP.</p>

<p>Spring Half Term 1</p>	<p><b>P4 - Arrays</b></p>	<p>How can we store larger amounts of data efficiently?</p>	<ul style="list-style-type: none"> <li>● Array concept</li> <li>● Types of array</li> <li>● Accessing and searching arrays</li> <li>● Sorting algorithms</li> <li>● 2D arrays</li> </ul>	<p><b>How understanding is assessed :</b></p> <ul style="list-style-type: none"> <li>● Dry Running exercises</li> <li>● Final assessed program</li> <li>● Observation and recording of progress in lessons</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>● Array programming</li> <li>● Searching arrays in different ways</li> <li>● Sorting arrays – single or multiple</li> </ul> <p><b>Assessment point information</b> The final assessed program feeds into an assessment point, as can the interim Dry Running marks and BM data from lessons</p>
<p>Spring Half Term 1</p>	<p><b>T4 – Systems Architecture and Logic</b></p>	<p>How do computers actually work?</p>	<ul style="list-style-type: none"> <li>● The CPU and its component parts</li> <li>● Registers and the F/E cycle</li> <li>● Assembly language using LMC</li> <li>● Logic gates and diagrams</li> <li>● Truth Tables</li> </ul>	<p><b>How understanding is assessed :</b></p> <ul style="list-style-type: none"> <li>● Formal homeworks test understanding of both of these sections</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>● Ability to write and understand low level code</li> <li>● Ability to draw up truth tables for simple gate combinations</li> </ul> <p><b>Assessment point information</b> Homework marks contribute to an Assessment Point</p>

<p>Spring Half Term 2</p>	<p><b>T5 – Networks and Internet</b></p>	<p>How and why do we connect computers together</p>	<ul style="list-style-type: none"> <li>• Network hardware</li> <li>• Types of network</li> <li>• Internet and Packet Switching</li> <li>• Protocols</li> <li>• Wire and wireless networks</li> </ul>	<p><b>How understanding is assessed :</b></p> <ul style="list-style-type: none"> <li>• A test exercise is used to check knowledge across the whole unit</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Ability to ‘tell the story’ of how the protocol stack works</li> </ul> <p><b>Assessment point information</b> The test exercise feeds into an Assessment Point</p>
<p>Spring Half Term 2</p>	<p><b>P5 – File Handling</b></p>	<p>How do we store data from programs and access it later?</p>	<ul style="list-style-type: none"> <li>• File handling keywords</li> <li>• Loading from files</li> <li>• Saving to files</li> </ul>	<p><b>How understanding is assessed :</b></p> <ul style="list-style-type: none"> <li>• Progress is monitored and captured during lessons</li> <li>• An assessed program is used to check students’ ability to load and save to file</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Delphi file handling</li> </ul> <p><b>Assessment point information</b> The final assessed program contributes to an Assessment Point, as does BM data from lessons</p>
<p>Summer Half Term 1</p>	<p><b>P6 – Subroutines and 2D arrays</b></p>	<p>How do I break a program into manageable chunks?</p>	<ul style="list-style-type: none"> <li>• Flag variables</li> <li>• 2d Array handling</li> <li>• Procedures and procedure calls</li> <li>• Functions</li> </ul>	<p><b>How understanding is assessed :</b></p> <ul style="list-style-type: none"> <li>• A series of game programs is completed and extended by students and progress in this monitored</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• 2D array programming</li> <li>• Calling and addition of procedures</li> <li>• Ability to turn a brief into program code</li> </ul>

				<p><b>Assessment point information</b> This work follows the last Assessment Point</p>
Summer Half Term 2	<b>T6 - ELCEC</b>	What are the legal and other societal ramifications of Computing?	<ul style="list-style-type: none"> <li>• The five Acts</li> <li>• Examples of moral and ethical issues which arise</li> </ul>	<p><b>How understanding is assessed :</b></p> <ul style="list-style-type: none"> <li>• Short essays</li> <li>• Homework exercises</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Understanding of the five Acts</li> <li>• Empathy with different perspectives in real-life situations</li> </ul> <p><b>Assessment point information</b> Marks gained are fed into the Summer AP</p>
Summer Half Term 2	<b>P7 – Programming Games</b>	How do a write a program with multiple sections	<ul style="list-style-type: none"> <li>• 2D arrays in practice</li> <li>• Parameter passing</li> <li>• Procedures and Functions</li> </ul>	<p><b>How understanding is assesseded :</b></p> <ul style="list-style-type: none"> <li>• Comprehension exercises</li> <li>• Adapting existing programs</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• 2D Arrays</li> <li>• Writing new Methods</li> <li>• Use of reference and value parameters</li> </ul> <p><b>Assessment point information</b> This work follows the last Assessment Point</p>

Curriculum Outline 2023-2024

Department:

Computing

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